


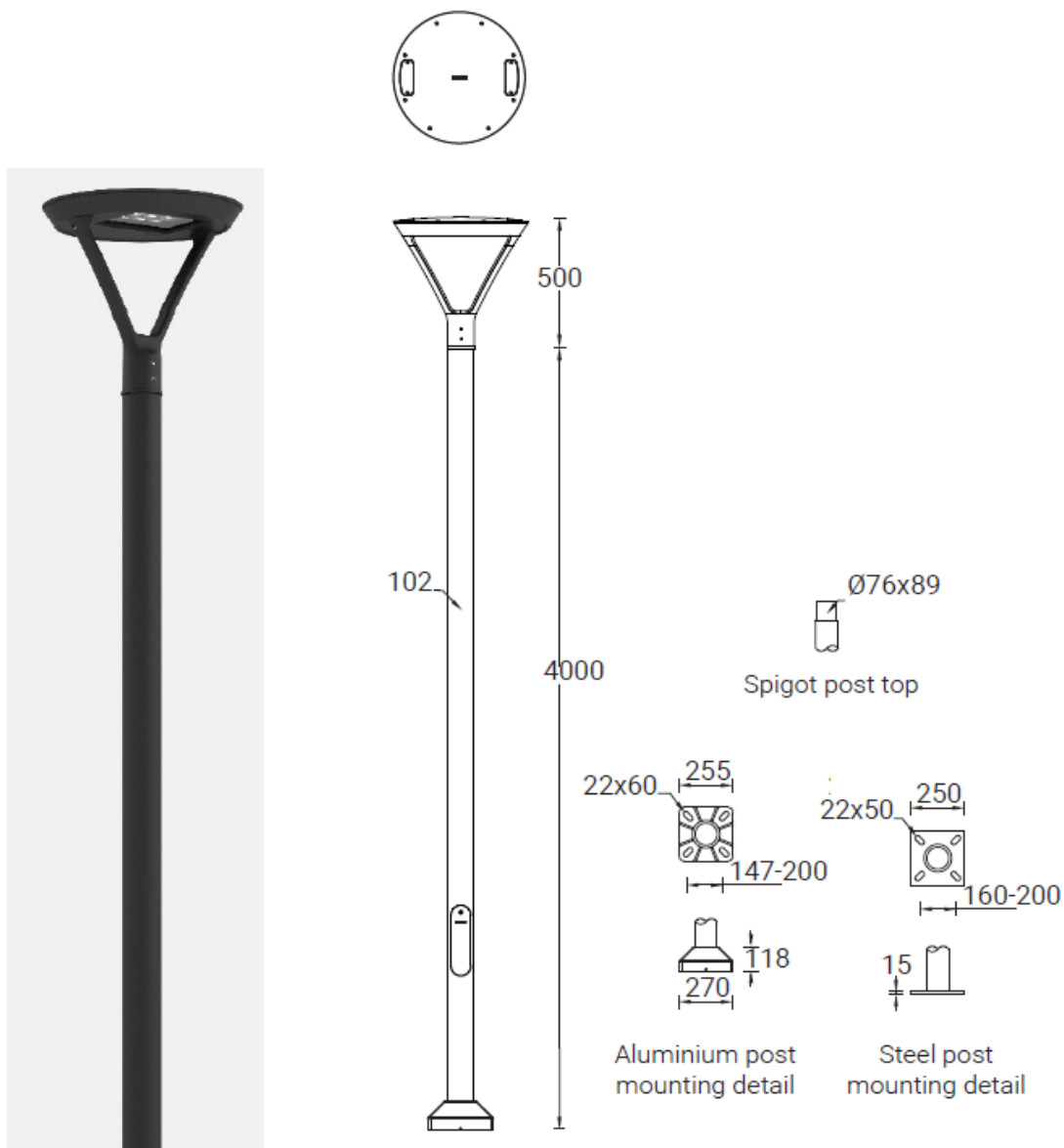
Report No.	U # u ‡
Applicant	Ligman Lighting Company Limited
Manufacturer	Ligman Lighting Company Limited 17/2 Moo 4, Monthong, Bangnampreaw, Chachoengsao Thailand.24150
Description of sample	Product name : U h Brand : LIGMAN Model / Type : U # u ‡ Cover similar design : -
Sample characteristic and condition	Normal
Date received	/1 /2018
Test date	/1 /2018
Test standard	LM79-2008
<p>Certified by</p>  <p>(CHAIYOD TOA-ARD) Engineer Photometric Laboratory Section Date /1 /2018</p>	 <p>(PONGSIRI DUANGSEANG) Chief Laboratory Division Date /1 /2018</p>

Luminaire			Measur.			Lamp	
Code	MC-20013-T3-W40		Code	LIGMAN		Code	ITLC035740-5050
Name	Macaron 2 Post top luminaire		Name	Macaron 2 Post top luminaire		Number	1
Line	Iesna 2002 Absolute		Date	21-11-2018		Position	
Luminaire Flux		13596.84 lm	Luminaire Power		141.00 W	Efficacy	96.43 lm/W
						Efficiency	100.00%
Lamps Flux		13596.84 lm	Maximum value	472.70 cd/klm	Position	C=157.50 G=67.50	CG Asymmetrical

Test method: according to LM79-2008

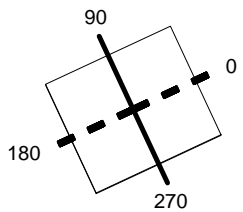
- Photometric parameter was measured using a Intergrating sphere, a Mirror Goniophotometer, a spectro radiometer and software.
- The Stabilization time typical ranges from 30 min (small integrated LED lamps) to 2 or more hours for large SSL luminaires It can be judged that stability is reached when the variation (maximum – minimum) of at least 3 readings of the light output and electrical power over a period of 30min, taken 15 minutes apart, is less than 0.5 %.
- The ambient temperature condition inside the testing room was maintained at 25°C ± 1°C.
- The sample was operated at 230 Volts AC 50Hz. It was stabilized before measurement.
- Chromaticity coordinates, correlated color temperature and color rendering index was calculated from the spectral radiant flux measurements taken at 2.2 nm intervals over the range of 360 to 830 nm. Method using a gonio-spectroradiometer measured at two vertical planes (C=0°/180° and C=90°/270°) and at 10° for vertical angle (Section 12.2)

Sample photo



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Rectangular Luminaire		Length	200 mm	Width	230 mm	Height	1 mm	
Rectangular Luminous Area		Length	200 mm	Width	230 mm	Height	0 mm	
Horizontal Luminous Area		0.046000 m2	Emitting area on Plane 180°			0.000000 m2		
Emitting area on Plane 0°		0.000000 m2	Emitting area on Plane 270°			0.000000 m2		
Emitting area on Plane 90°		0.000000 m2	Glare area at 76°			0.011128 m2		
Coordinate system		CG	Symmetry Type			Asymmetrical		
Date		21-11-2018	Maximum Gamma Angle			90		
Measurement Distance		0.00	Measurement Flux			13596.84 lm		
Operator		Source voltage			Source current			
Temperature		25.00 °C			Photocell			
Humidity		60.00 %						
Notes								

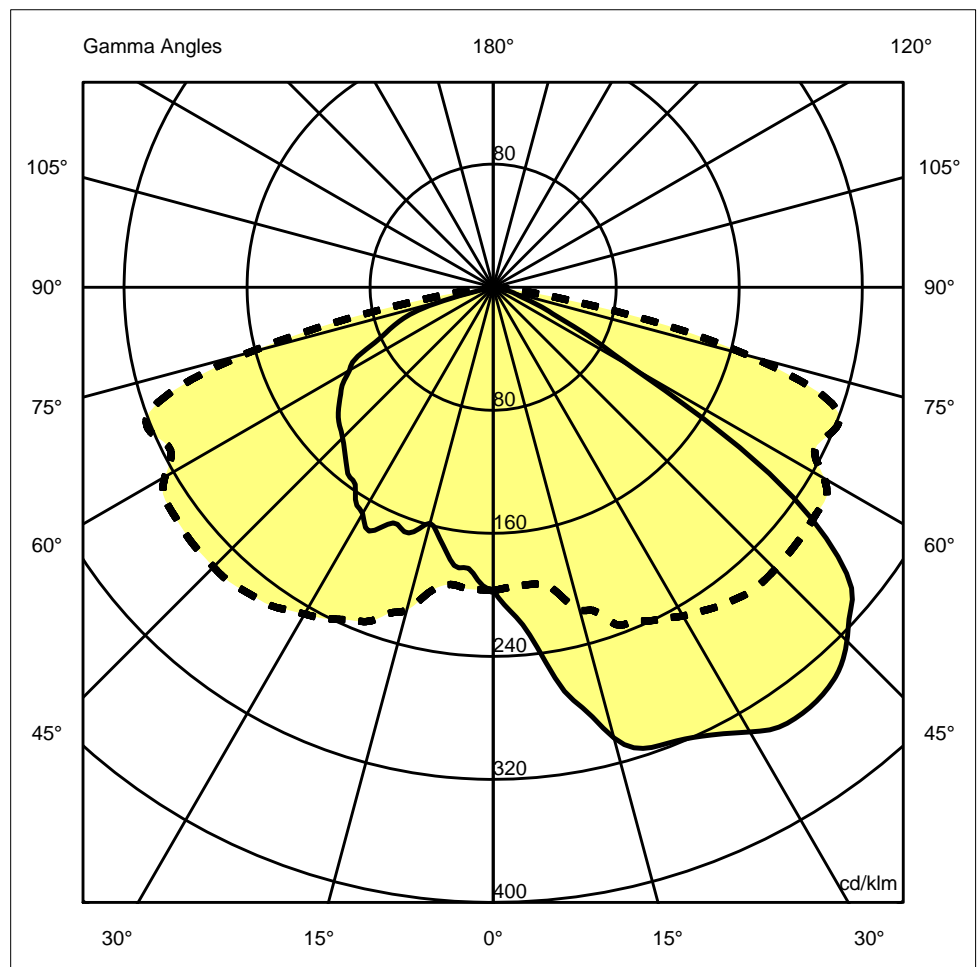
Line		Code					Luminaire Lamps		Flux [lm]	Pow. [W]	Q.ty
		ITLC035740-5050					Name 64 LED 4000K - 141.00 W		13596.84	141.00	1
C.I.E.							D DIN 5040		A20		
200mm x 230mm		38 74 97 100 100					B NBN		BZ 6 / 0.8 / BZ 5		
F.U.T.		1.00 E									



C Halfplanes

180.0 - - - - - 0.0
270.0 ———— 90.0

ULOR 0.00 %
DLOR 100.00 %
RN 0.00 %



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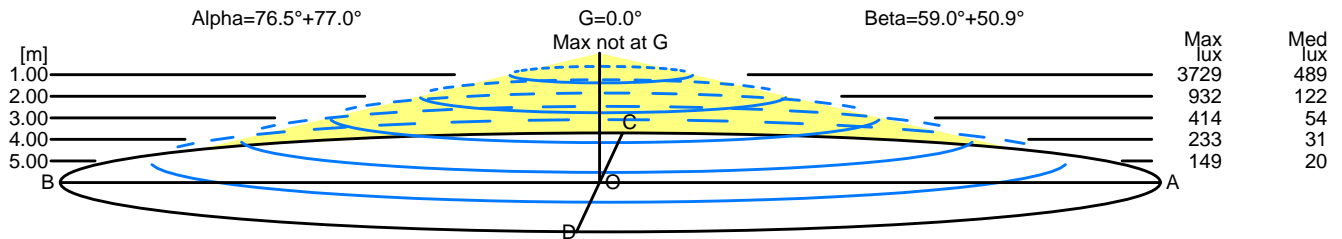
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Width at 50.00 % of Max Intensity

H[m]	1.00	2.00	3.00	4.00	5.00	H[m]	1.00	2.00	3.00	4.00	5.00
OA	4.33	8.67	13.00	17.34	21.67	OC	1.67	3.33	5.00	6.66	8.33
OB	4.16	8.33	12.49	16.66	20.82	OD	1.23	2.46	3.69	4.92	6.15

	Luminous Intensities [cd/klm]									
	0	5	15	25	35	45	55	65	75	85
OA	2682.70	2647.30	2959.00	3255.20	3450.00	3525.30	3489.00	3205.80	2351.10	51.60
OB	2682.70	2675.80	2959.00	3239.60	3434.40	3496.80	3465.60	3221.40	2252.40	37.00
OC	2682.70	2995.40	4125.50	4377.50	4652.80	4421.60	3237.00	659.90	184.50	17.30
OD	2682.70	2494.00	2158.90	2340.70	2127.70	1880.90	1647.10	1153.50	452.00	25.50



H[m]	D[m]	Max lux	Med lux	Alpha=76.5°+77.0°	G=0.0 Max not at G
1.00	8.50	3729	489		
2.00	17.00	932	122		
3.00	25.50	414	54		
4.00	33.99	233	31		
5.00	42.49	149	20		

H[m]	D[m]	Max lux	Med lux	Beta=50.9°+59.0°	G=0.0 Max not at G
1.00	2.90	3729	489		
2.00	5.79	932	122		
3.00	8.69	414	54		
4.00	11.58	233	31		
5.00	14.48	149	20		

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Test person:

[Signature]

Reviewed by:

[Signature]

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Luminaire

Code MC-20013-T3-W40
Name Macaron 2 Post top luminaire
Line lesna 2002 Absolute

Measur.

Code LIGMAN
Name Macaron 2 Post top luminaire
Date 21-11-2018

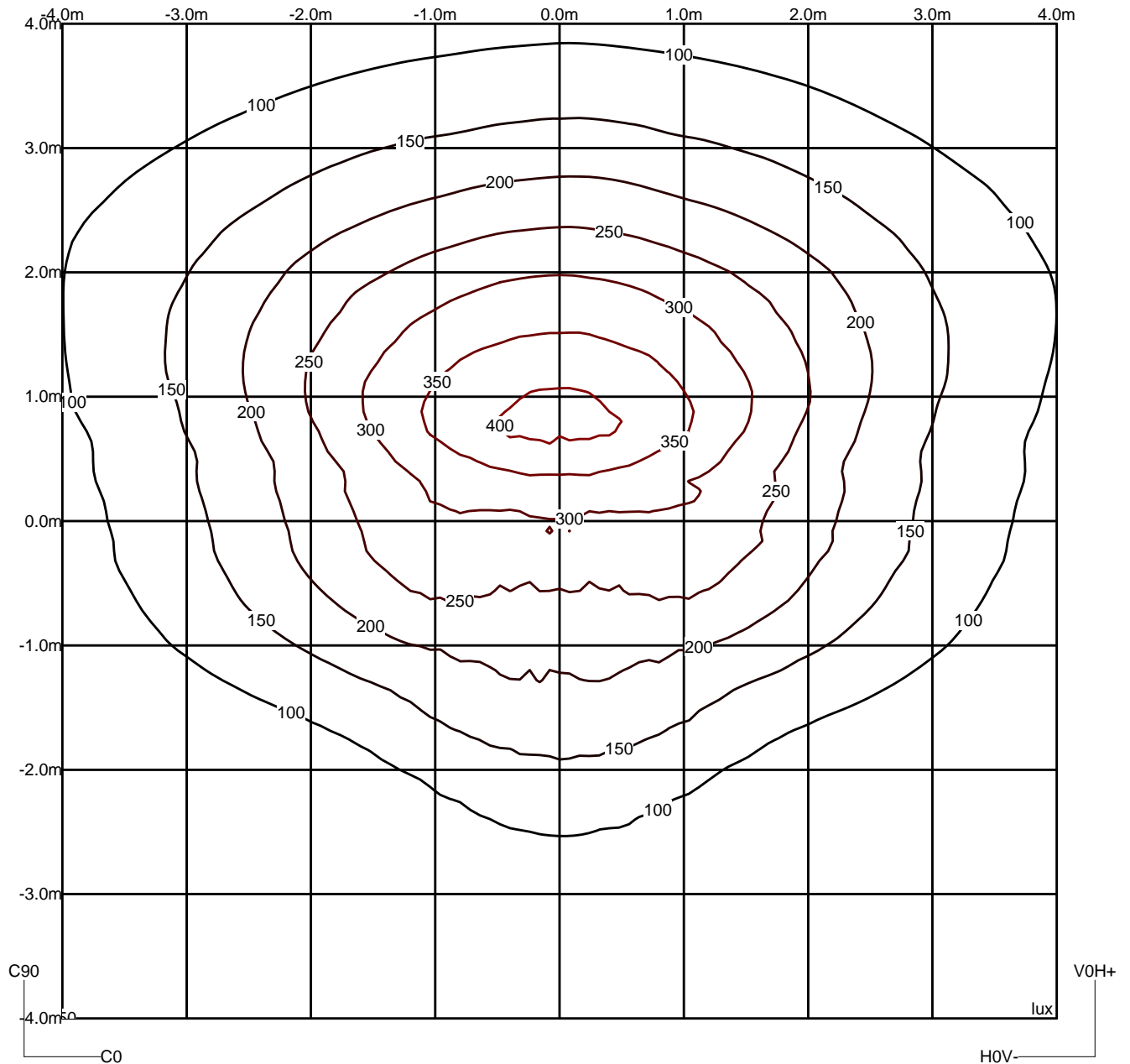
Lamp

Code ITLC035740-5050
Number 1
Position

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Isolux (Floor)

Luminaire position X=0.00m Y=0.00m Z=3.00m



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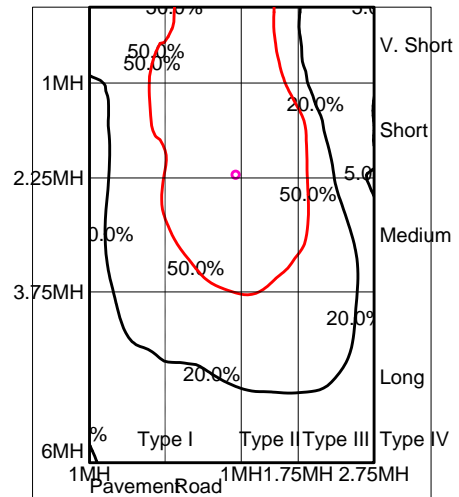
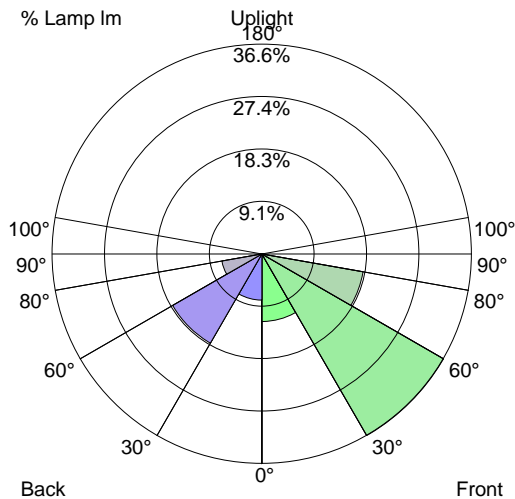
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US ROAD STANDARDS



Luminaire Classification System (LCS)				
LCS Zone		Lumens	%Lamp	%Lum
FL	0° -- 30°	1601.8 lm	11.8 %	11.8 %
FM	30° -- 60°	4970.6 lm	36.6 %	36.6 %
FH	60° -- 80°	2436.4 lm	17.9 %	17.9 %
FVH	80° -- 90°	59.5 lm	0.4 %	0.4 %
BL	0° -- 30°	1095.1 lm	8.1 %	8.1 %
BM	30° -- 60°	2441.7 lm	18.0 %	18.0 %
BH	60° -- 80°	963.0 lm	7.1 %	7.1 %
BVH	80° -- 90°	28.7 lm	0.2 %	0.2 %
UL	90° -- 100°	0.0 lm	0.0 %	0.0 %
UH	100° -- 180°	0.0 lm	0.0 %	0.0 %
TOTALS		13596.8 lm	100.0 %	100.0 %
BUG B3 U0 G2 Type III Short Asymmetrical				

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[Signature]

Reviewed by:

[Signature]

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